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ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
19702A GSRs, MISSILE NUMBERS BR-5, BR-6, ROUND NUMBERS B-41, B---ETC(U)
OCT 79

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REPORT DOCUMENTATION PAGE		REPORT FORM
1. REPORT NUMBER	2. GOVT ACCESSION NUMBER	3. REPORT NUMBER
DR-1877		
4. TITLE (and Subtitle)		5. TYPE OF REPORT & PERIOD COVERED
19702A GSRS, Missile Numbers BR-5, BR-6, Round Numbers B-41, B-42, 17 October 1979.		
6. PERFORMING ORG. REPORT NUMBER		
7. AUTHOR(s)		8. CONTRACT OR GRANT NUMBER(s)
White Sands Meteorological Team		DA Task 1F6657820127-02
9. PERFORMING ORGANIZATION NAME AND ADDRESS		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
data rept.		
11. CONTROLLING OFFICE NAME AND ADDRESS		12. REPORT DATE
US Army Electronics Research & Development Cmd Atmospheric Sciences Laboratory White Sands Missile Range, NM 88002		October 1979
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		13. NUMBER OF PAGES
US Army Electronics Research & Development Cmd Adelphi, MD 20783		28
16. DISTRIBUTION STATEMENT (of this Report)		15. SECURITY CLASS. (of this report)
13, 24		UNCLASSIFIED
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
Approved of public release; distribution unlimited.		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
1. Ballistics 2. Meteorology 3. Wind		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)		
Meteorological data gathered for the launching of 19702A GSRS, Missile Numbers BR-5, BR-6, Round Numbers B-41, B-42, are presented in tabular form.		

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

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INTRODUCTION

19702A GSRS, Missile Numbers BR-5 and BR-6, Round Numbers B-41 and B-42, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 0905:35 AND 0945:06 MDT 17 October 1979. The scheduled launch times were 0900 and 0945 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from RAPTS T-9 pibal observation at:

SITE AND ALTITUDE

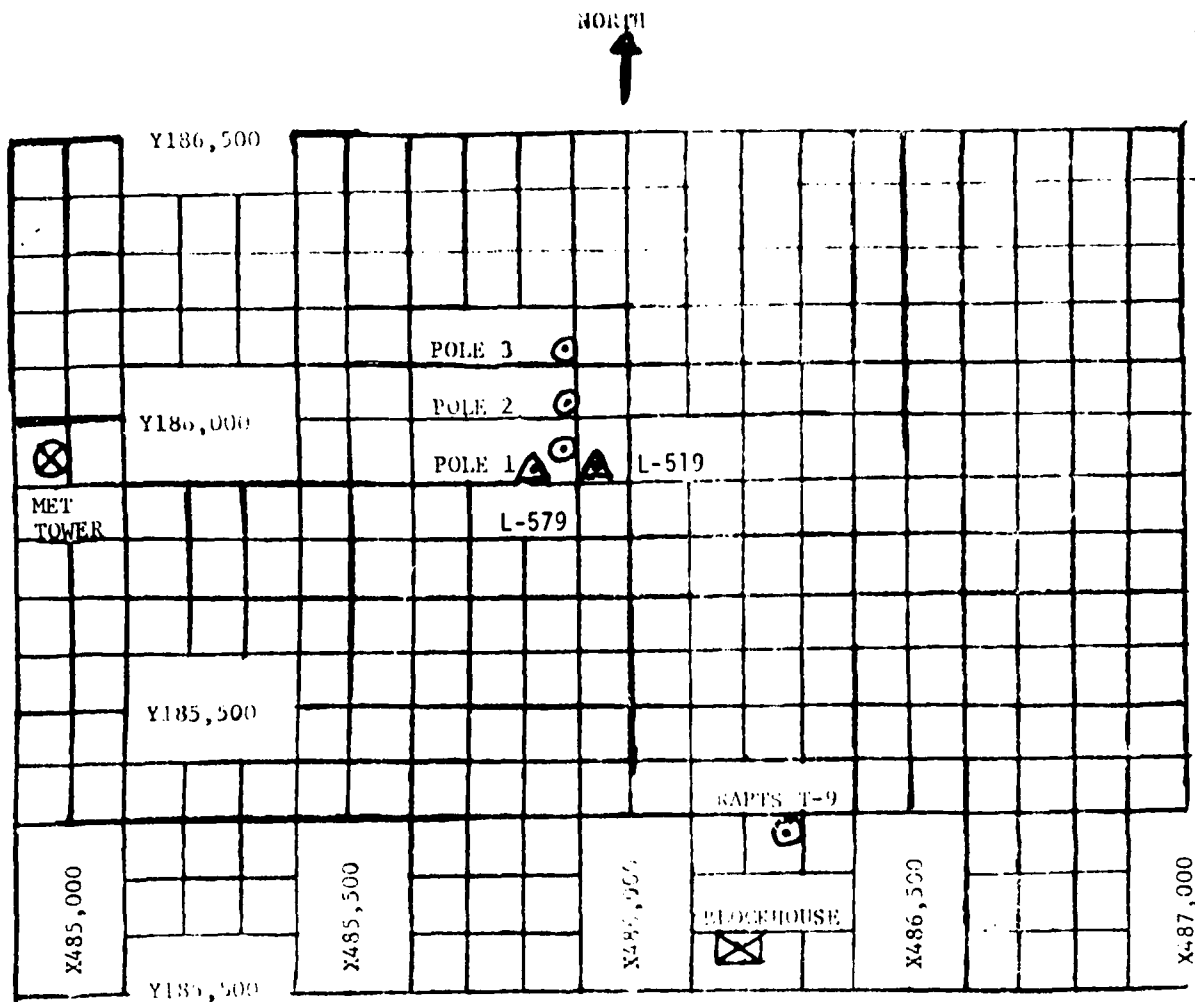
LC-33 2 Km
NICK 2 Km

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 81,000 feet in 500-foot increments.

SITE AND TIME

SMR 0815 MST

Accession For	
NTIS GRA&I	<input checked="checked" type="checkbox"/>
DOC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or special
A	254



1. MET TOWER - 4 Bendix Model T-20 Anemometers at 10 ft, 30 ft, 102 ft, and 105 ft with E/A recorders.
2. POLE ANEMOMETER - Bendix Model T-120 with E/A recorders.
 - (a) Pole #1 - 38.7 ft
 - (b) Pole #2 - 53.0 ft
 - (c) Pole #3 - 83.6 ft
3. RAPTS T-9 Radar Automatic Pilot-Balloon Tracking System T-9 Radar.

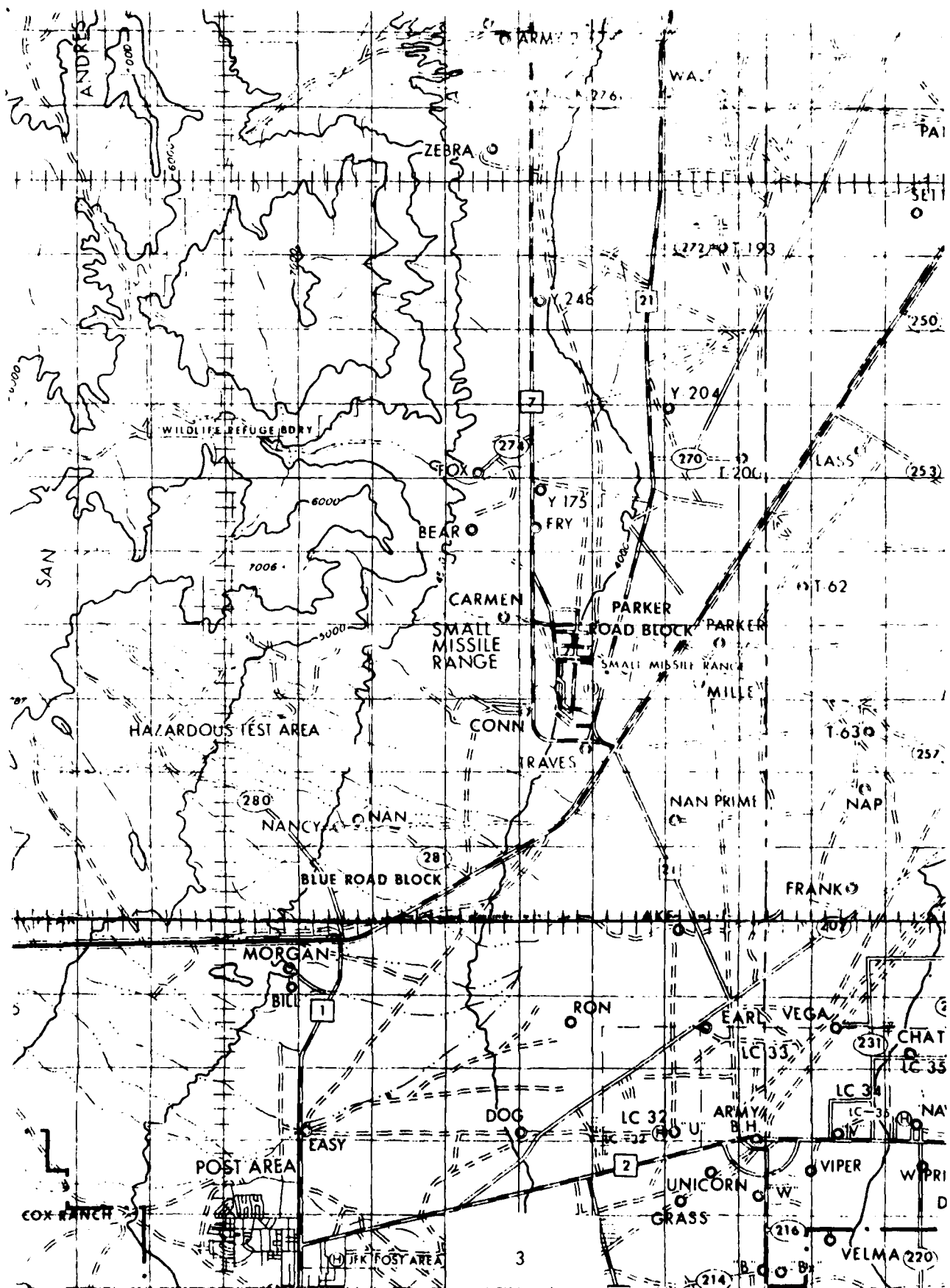


TABLE 1. Surface Observations taken at 0500 J1,
17 October 1979, at LC-33, 19702A GSRS,
Missile Number BR-5, Round Number B-41.

ELEVATION	3977.30	FT/MSL
PRESSURE	881.9	MBS
TEMPERATURE	15.5	°C
RELATIVE HUMIDITY	48	%
DEW POINT	4.5	°C
DENSITY	1059	GM/M ³
WIND SPEED	03	KTS
WIND DIRECTION	190	DEGREES
CLOUD COVER	2	Ac
CLOUD COVER	4	Ci

LC-33 FIXED POLE ANEMOMETER DATA

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	180	01	-30		CALM	-30	122	01
-20	180	01	-20		CALM	-20	140	02
-10	174	01	-10	153	01	-10	121	02
0.0	174	01	0.0	153	02	0.0	114	02
+10	174	02	+10	160	02	+10	128	03

POLE #1 = X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL

POLE #2 = X485,874.93 Y186,012.00 H4033.57 53.0 ft AGL

POLE #3 = X485,877.29 Y186,116.06 H4063.92 83.6 ft AGL

TABLE 2

TYPE 19702A GSRS MISSILE NO. BR-5 ROUND NO. B-41

LAUNCHED FROM LC-33 DATE 17 October 1979 TIME 0905:35 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASUREMENTS (WIND)

LEVEL #1 12 Feet			LEVEL #2 65 Feet		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	135	02	-30	120	03
-20	134	03	-20	120	02
-10	134	03	-10	120	01
0.0	134	02	0.0	120	01
+10	134	02	+10		CALM
LEVEL #3 102 Feet			LEVEL #4 202 Feet		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	096	03	-30	072	03
-20	088	03	-20	072	04
-10	092	03	-10	087	03
0.0	110	03	0.0	084	03
+10	114	02	+10	084	03

WTSM COORDINATES: X484,982.64 Y185,057.73 H3983.00 (base)

TABLE 3

TYPE 19702A GSRS MISSILE NO. BR-5 ROUND NO. B-41

LAUNCHED FROM LC-33 DATE 17 October 1979 TIME 0905:35 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

GSRs PILOT BALLOON MEASURED WIND DATA

TABLE 4

RELEASED FROM LC-33 DATE 17 October 1979 TIME 0857 MDT

TRACKER COORDINATES (WSTM) X= 486,037.24 Y 182,350.16 H 3977.30

MISSILE TYPE 19702A GSRS MISSILE NO. BR-5 ROUND NO. B-41

MISSILE LAUNCHED FROM LC-33 DATE 17 October 1979 TIME 0905:35 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

HEIGHT - METERS AGL

[illegible]

GSRS PILOT BALLOON MEASURED WIND DATA

TABLE 5

RELEASED FROM LC-33 DATE 17 October 1979 TIME 0905 MDT
 TRACKER COORDINATES (WSTM) X= 486.037.24 Y= 182.350.16 H= 3977.30
 MISSILE TYPE 19702A GSRS MISSILE NO. BR-5 ROUND NO. B-41
 MISSILE LAUNCHED FROM LC-33 DATE 17 October 1979 TIME 0905:35 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	180	02						
90	131	04						
150	037	07						
210	015	09						
270	017	12						
330	017	15						
390	015	07						
500	MISG	MISG						
650	124	05						
800	109	11						
950	116	13						
1150	167	09						
1350	207	07						
1550	217	08						
1750	230	08						
2000	236	09						

GSRS PILOT BALLOON MEASURED WIND DATA

TABLE 6

RELEASED FROM NICK DATE 17 October 1979 TIME 0850 MDT
 TRACKER COORDINATES (WSIM) X= 470,734.56 Y= 255,775.64 H= 4126.57
 MISSILE TYPE 19702A GSRS MISSILE NO. BR-5 ROUND NO. B-41
 MISSILE LAUNCHED FROM LC-33 DATE 17 October 1979 TIME 0905:35 MDT
 NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	300	05						
90	210	05						
150	209	09						
210	212	08						
270	175	08						
330	203	09						
390	200	08						
500	150	05						
650	090	04						
800	056	05						
950	014	07						
1150	017	08						
1350	021	07						
1550	062	06						
1750	088	07						
2000	087	06						

GSRS PILOT BALLOON MEASUREMENT DATA

TABLE 7

RELEASED FROM NICK DATE 17 October 1979 TIME 0905 MDT
 TRACKER COORDINATES (WSTM) X- 470,734.56 Y- 255,755.64 H 4126.57
 MISSILE TYPE 19702A GSRS MISSILE NO. BR-5 ROUND NO. B-41
 MISSILE LAUNCHED FROM LC-33 DATE 17 October 1979 TIME 0905:35 MDT
 NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	320	06						
90	MISG	MISG						
150	208	08						
210	230	08						
270	226	09						
330	220	08						
390	200	08						
500	185	05						
650	166	08						
800	070	06						
950	028	06						
1150	036	08						
1350	025	07						
1550	085	06						
1750	107	06						
2000	116	05						

TABLE 1. Surface Observations taken at 0945 MDT,
17 October 1979, at LC-33, 19702A GSRS,
Missile Number BR-6, Round Number B-42.

ELEVATION	3977.30	FT/MSL
PRESSURE	882.2	MBS
TEMPERATURE	19.0	°C
RELATIVE HUMIDITY	39	
DEW POINT	4.8	°C
DENSITY	1047	GM/M ³
WIND SPEED	08	KTS
WIND DIRECTION	360	DEGREES
CLOUD COVER	1	Ac
CLOUD COVER	4	Ci

LC-33 FIXED POLE ANEMOMETER MEASURED WIND

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	027	05	-30	009	06	-30	036	06
-20	030	06	-20	015	06	-20	024	07
-10	024	06	-10	023	05	-10	016	08
0.0	016	05	0.0	018	06	0.0	033	07
+10	028	06	+10	012	06	+10	027	06

POLE #1 = X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL

POLE #2 = X485,874.93 Y186,012.00 H4033.57 53.0 ft AGL

POLE #3 = X485,877.29 Y186,116.06 H4063.92 83.6 ft AGL

TABLE 9

TYPE 19702A GSRS MISSILE NO. BR-6 ROUND NO. B-42

LAUNCHED FROM LC-33 DATE 17 October 1979 TIME 0945:06 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1 12 Feet			LEVEL #2 62 Feet		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	021	02	-30	005	05
-20	014	03	-20	006	05
-10	357	04	-10	017	06
0.0	360	04	0.0	023	06
+10	012	04	+10	002	04
LEVEL #3 102 Feet			LEVEL #4 202 Feet		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	005	04	-30	009	06
-20	005	04	-20	009	04
-10	015	05	-10	360	06
0.0	352	05	0.0	346	06
+10	353	05	+10	357	05

WTSM COORDINATES: X484,982.64 Y185,057.73 H3983.00 (base)

TABLE 10

TYPE 19702A GSRS MISSILE NO. BR-6 ROUND NO. B-42

LAUNCHED FROM LC-33 DATE 17 October 1979 TIME 0945:06 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

GSRS PILOT BALLOON MEASURED WIND DATA

TABLE 11

RELEASED FROM LC-33 DATE 17 October 1979 MI 09.00 MDT
 TRACKER COORDINATES (WSTM) X= 486,037.24 Y= 182,350.16 H= 3977.30
 MISSILE TYPE 19702A GSRS MISSILE NO. BR-6 ROUND NO. B-42
 MISSILE LAUNCHED FROM LC-33 DATE 17 October 1979 TIME 0945:06 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	070	04						
90	MISG	MISG						
150	036	07						
210	017	09						
270	021	12						
330	012	14						
390	006	12						
500	034	05						
650	092	05						
800	101	11						
950	114	14						
1150	143	08						
1350	181	08						
1550	205	09						
1750	220	09						
2000	222	08						

GSRS PILOT BALLOON MEASURED WIND DATA

TABLE 12

RELEASED FROM LC-33 DATE 17 October 1979 TIME 0945 MDT
 TRACKER COORDINATES (WSTM) X= 486,037.24 Y= 182,350.16 H= 3977.30
 MISSILE TYPE 19702A GSRS MISSILE NO. BR-6 ROUND NO. B-42
 MISSILE LAUNCHED FROM LC-33 DATE 17 October 1979 TIME 0945:06 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	360	07						
90	MISG	MISG						
150	009	09						
210	017	09						
270	003	10						
330	359	09						
390	024	07						
500	073	05						
650	090	06						
800	104	13						
950	122	13						
1150	144	09						
1350	192	06						
1550	211	10						
1750	212	08						
2000	218	09						

GSRS PILOT BALLOON MEASURED WIND DATA

TABLE 13

RELEASED FROM NICK DATE 17 October 1979 TIME 0935 MDT
 TRACKER COORDINATES (WSTM) X= 470,734.56 Y= 255,775.64 H= 4126.57
 MISSILE TYPE 19702A GSRS MISSILE NO. BR-6 ROUND NO. B-42
 MISSILE LAUNCHED FROM LC-33 DATE 17 October 1979 TIME 0945:06 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	310	02						
90	MISG	MISG						
150	276	10						
210	277	09						
270	251	10						
330	236	07						
390	233	07						
500	188	06						
650	152	06						
800	114	05						
950	085	06						
1150	066	10						
1350	063	08						
1550	134	05						
1750	172	07						
2000	178	06						

GSRS PILOT BALLOON MEASURED WIND DATA

TABLE 14

RELEASED FROM NICK DATE 17 October 1979 TIME 0945 MDT
 TRACKER COORDINATES (WSTM) X= 470,734.56 Y= 255,775.64 H= 4126.57
 MISSILE TYPE 19702A GSRS MISSILE NO. BR-6 ROUND NO. B-42
 MISSILE LAUNCHED FROM LC-33 DATE 17 October 1979 TIME 0945:06 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	300	02						
90	MISG	MISG						
150	320	10						
210	291	08						
270	255	09						
330	291	04						
390	301	07						
500	230	09						
650	180	05						
800	130	07						
950	115	04						
1150	116	08						
1350	120	09						
1550	134	08						
1750	154	06						
2000	191	04						

STATION ALTITUDE 3997.30 FEET MSL
17 OCT. 79 0815 HRS MST
ASCENSION NO. 303

SIGNIFICANT LEVEL DATA
2900000353
5 M R

GEODETIC COORDINATES
32.40034 LAT LEG
106.42307 LONG DEG

TABLE 15

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	
600.9	3997.3	17.0	0.0	51.0
673.0	4246.5	14.5	.4	58.0
650.0	4990.1	15.1	.5	57.0
600.8	6370.1	14.5	-.8	55.0
778.0	7444.9	13.1	-1.0	56.0
728.0	9252.5	11.9	-3.0	55.0
700.0	10349.2	9.8	-9.5	25.0
690.8	10709.3	9.5	-12.5	20.0
602.2	14397.7	1.7	-14.0	50.0
573.2	15697.7	-1.7	-10.7	50.0
501.0	16259.1	-3.5	-12.9	48.0
545.0	17008.8	-5.0	-12.5	58.0
533.0	17553.7	-6.1	-15.5	47.0
514.4	18492.2	-8.9	-20.2	23.0
500.0	19215.0	-10.5	-25.4	28.0
459.3	21340.3	-16.0	-22.7	50.0
448.8	21912.5	-16.9	-31.0	26.0
402.4	24574.4	-23.3	-35.0	53.0
400.0	24718.3	-24.1	-30.0	58.0
308.6	30704.9	-38.8	-40.7	32.0
300.0	31402.2	-40.0	-42.1	50.0
263.0	34314.9	-47.5	-49.5	51.0
250.0	35411.4	-50.4		
235.0	36733.9	-52.8		
226.0	37503.3	-53.0		
200.0	40140.9	-56.3		
181.0	42220.5	-57.1		
154.4	45509.2	-61.4		
150.0	46100.7	-61.2		
119.6	50679.5	-66.5		
100.0	54248.4	-67.1		
81.0	58233.8	-68.0		
75.0	59801.3	-66.7		
70.0	61330.8	-68.6		
63.6	63244.0	-65.1		
55.2	66111.5	-62.7		
50.0	68150.9	-60.5		
46.0	69504.6	-61.0		
40.8	72343.4	-55.7		
35.2	75449.8	-56.7		

STATION ALTITUDE 3997.30 FEET MSL
 17 OCT. 79 0815 HRS MST
 ASCENSION NO. 303

SIGNIFICANT LEVEL DATA

29000.0355
 5 M R

GEOLITIC COORDINATES
 32.40034 LAT CLG
 100.42307 LON CLG

TABLE 15 (CONT)

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUMID. PERCENT
	AIR	DEWPOINT DEGREES CENTIGRADE	
30.0 76607.2	-55.9		
26.8 81200.5	-52.4		

STATION ALTITUDE 3997.30 FLEET MSL
17 OCT. 79 0815 HRS MST
ASCENSION NO. 353

UPPER AIR DATA
2900000353
S M R

GEODETIC COORDINATES
32.40034 LAT DEG
100.42307 LON DEG

TABLE 16

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND M/SEC	DIRECTION DEGREES (T)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3997.3	860.9	17.0	51.0	1053.2	005.0	105.0	6.0	1.000279
4000.0	860.8	17.0	50.9	1053.2	005.0	105.0	6.0	1.000279
4500.0	865.1	14.7	37.7	1044.1	001.9	100.0	5.6	1.000261
5000.0	849.7	15.1	37.0	1024.0	002.4	100.4	5.2	1.000257
5500.0	834.5	14.9	36.3	1000.6	002.1	190.0	4.8	1.000252
6000.0	819.0	14.7	35.5	989.4	001.8	193.1	4.4	1.000248
6500.0	805.0	14.5	35.1	972.9	001.4	100.3	5.4	1.000243
7000.0	790.0	13.7	35.6	957.7	000.7	145.1	8.4	1.000239
7500.0	775.4	13.1	35.9	942.0	000.0	142.4	10.5	1.000235
8000.0	762.5	12.7	35.1	925.8	009.5	148.0	11.1	1.000230
8500.0	746.8	12.0	34.2	911.2	009.1	159.0	10.1	1.000226
9000.0	735.3	12.1	33.4	895.9	000.7	195.2	8.0	1.000222
9500.0	722.0	11.4	31.2	881.9	007.9	221.0	8.7	1.000216
10000.0	709.0	10.5	27.5	869.2	000.7	220.5	9.1	1.000210
10500.0	696.1	9.7	22.9	850.2	005.7	223.5	9.9	1.000204
11000.0	683.4	9.9	20.8	843.0	004.7	223.2	11.3	1.000199
11500.0	670.8	7.3	22.1	830.0	003.5	219.8	13.4	1.000196
12000.0	658.4	6.8	23.5	816.3	002.2	217.7	15.9	1.000194
12500.0	646.3	5.7	24.9	800.3	001.0	210.0	16.9	1.000191
13000.0	634.4	4.7	26.2	794.4	009.0	210.4	17.1	1.000188
13500.0	622.7	3.6	27.6	782.8	006.5	215.4	15.4	1.000185
14000.0	611.2	2.5	28.9	771.3	007.3	213.7	12.7	1.000182
14500.0	599.9	1.4	31.6	760.0	006.0	211.9	10.6	1.000180
15000.0	588.6	.1	39.3	749.2	004.3	210.1	9.0	1.000179
15500.0	577.5	-1.2	47.0	730.5	003.0	203.7	9.4	1.000178
16000.0	566.0	-2.7	48.9	720.6	001.2	201.4	11.3	1.000175
16500.0	555.8	-4.2	51.2	710.7	009.4	199.0	13.0	1.000172
17000.0	545.2	-5.6	57.9	700.0	007.8	197.5	14.5	1.000170
17500.0	534.7	-6.1	48.1	690.5	007.1	197.0	15.6	1.000165
18000.0	524.4	-7.4	35.6	680.9	005.3	193.7	16.4	1.000160
18500.0	514.2	-8.9	23.1	677.0	003.4	201.1	17.8	1.000155
19000.0	504.2	-10.0	26.5	667.2	002.1	204.1	19.8	1.000153
19500.0	494.3	-11.2	31.9	657.1	000.7	200.9	21.7	1.000151
20000.0	484.5	-12.5	38.4	647.2	009.1	209.0	23.6	1.000149
20500.0	475.0	-13.8	44.9	637.0	007.6	211.5	24.8	1.000147
21000.0	465.6	-15.1	51.5	625.1	006.0	213.0	25.4	1.000145
21500.0	456.3	-16.3	47.6	610.4	004.0	215.2	25.5	1.000142
22000.0	447.2	-17.1	26.2	600.2	003.5	218.3	25.3	1.000138
22500.0	438.1	-18.3	27.5	590.7	002.0	221.9	25.2	1.000136
23000.0	429.2	-19.5	28.9	589.3	020.5	220.2	25.4	1.000133

STATION ALTITUDE 3997.30 FEET MSL
17 OCT. 79 0015 HRS MST
ASCENSION NO. 353

UPPER AIR DATA
2900000000
S M R

GEODETTIC COORDINATES
32.40034 LAT DEG
106.42307 LONG DEG

TABLE 16 (CONT)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GRAMS/CUBIC METER	SOUND METERS PER SECOND	WIND DATA DIRECTION DEGREES (TRUE)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	429.5	-20.7	30.2	580.1	019.1	229.7	26.1	1.000131
24000.0	412.0	-21.9	31.5	571.1	017.0	231.6	27.7	1.000129
24500.0	403.5	-23.1	32.8	562.2	010.1	233.4	29.1	1.000127
25000.0	395.2	-24.8	34.1	554.1	014.1	234.2	30.4	1.000126
25500.0	386.3	-26.0	35.1	545.0	012.0	235.0	31.7	1.000124
26000.0	373.6	-27.2	33.1	536.1	011.1	235.9	33.1	1.000122
26500.0	370.6	-28.4	35.1	527.3	009.0	236.9	34.4	1.000120
27000.0	362.7	-29.6	37.1	518.7	008.0	238.4	35.2	1.000118
27500.0	353.0	-30.9	39.0	510.3	006.5	240.0	35.8	1.000116
28000.0	347.5	-32.1	71.0	502.0	003.0	242.2	35.4	1.000114
28500.0	340.1	-33.3	73.0	493.8	003.4	244.0	35.6	1.000112
29000.0	332.9	-34.5	75.0	485.0	001.9	244.3	37.2	1.000110
29500.0	325.8	-35.7	77.0	477.9	000.4	244.0	38.9	1.000108
30000.0	318.9	-36.9	79.0	470.2	998.8	241.5	40.4	1.000106
30500.0	312.1	-38.2	80.9	462.6	997.3	239.7	41.8	1.000104
31000.0	305.4	-39.2	81.3	454.7	995.9	238.1	42.0	1.000102
31500.0	298.7	-40.3	80.0	446.7	994.0	232.7	42.5	1.000100
32000.0	292.0	-41.5	80.2	439.1	992.9	231.5	44.4	1.000099
32500.0	285.5	-42.8	80.4	431.7	991.3	230.3	46.4	1.000097
33000.0	279.1	-44.1	80.5	424.3	989.0	230.9	47.8	1.000095
33500.0	272.9	-45.4	80.7	417.3	988.0	231.3	49.2	1.000094
34000.0	266.8	-46.7	80.9	410.3	986.3	231.5	51.2	1.000092
34500.0	260.8	-48.0	67.3**	403.4	984.6	231.6	53.3	1.000090
35000.0	254.8	-49.3	30.4**	396.5	982.9	232.0	55.6	1.000088
35500.0	249.0	-50.6		389.6	981.2	232.3	58.4	1.000087
36000.0	243.2	-51.5		382.2	980.0	233.1	57.7	1.000085
36500.0	237.6	-52.4		374.9	978.9	233.6	56.7	1.000083
37000.0	232.1	-52.9		367.0	978.2	234.0	55.4	1.000082
37500.0	226.7	-53.0		359.7	976.1	235.9	54.0	1.000080
38000.0	221.4	-53.6		351.2	977.3	237.1	52.1	1.000078
38500.0	216.2	-54.2		344.0	976.5	238.0	49.8	1.000077
39000.0	211.1	-54.8		336.9	975.0	239.6	47.1	1.000075
39500.0	206.2	-55.5		330.0	974.0	240.1	43.7	1.000073
40000.0	201.3	-56.1		323.2	973.9	239.4	41.7	1.000072
40500.0	196.6	-56.4		316.0	973.5	238.6	42.9	1.000070
41000.0	191.9	-56.0		308.8	973.3	238.0	44.4	1.000069
41500.0	187.4	-56.8		301.6	973.0	237.0	46.5	1.000067
42000.0	183.0	-57.0		294.9	972.7	235.1	48.6	1.000066
42500.0	178.6	-57.5		288.5	972.2	233.3	49.3	1.000064
43000.0	174.3	-58.1		282.4	971.3	237.0	49.9	1.000063

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3997.30 FEET MSL
17 OCT. 79 0315 HRS MST
ASCENSION NO. 353

UPPER AIR DATA
2900000550
S M R

GLODETIC COORDINATES
32.48054 LAT DEG
106.42307 LONG DEG

TABLE 16 (CONT)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND M/SEC	DIRECTION, DEGREES (T)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
43500.0	170.2	-58.8		270.5	570.4	253.5	49.6	1.0000062
44000.0	166.1	-59.4		270.7	569.5	258.9	48.8	1.0000060
44500.0	162.1	-60.1		265.1	563.7	259.5	47.1	1.0000059
45000.0	158.3	-60.7		259.5	567.3	240.3	44.2	1.0000058
45500.0	154.5	-61.4		254.1	560.9	241.5	41.6	1.0000057
46000.0	150.7	-61.2		247.8	567.1	242.3	40.7	1.0000055
46500.0	147.1	-61.7		242.2	566.0	243.5	39.9	1.0000054
47000.0	143.5	-62.2		237.0	563.8	244.5	39.9	1.0000053
47500.0	140.0	-62.8		231.8	565.0	245.2	40.0	1.0000052
48000.0	136.5	-63.4		226.8	564.2	245.6	39.3	1.0000051
48500.0	133.2	-64.0		221.9	563.4	246.3	38.2	1.0000049
49000.0	130.0	-64.6		217.0	562.7	247.1	36.9	1.0000048
49500.0	126.8	-65.1		212.3	561.9	248.1	35.6	1.0000047
50000.0	123.7	-65.7		207.7	561.1	250.0	34.5	1.0000046
50500.0	120.7	-66.3		203.2	560.3	254.5	34.2	1.0000045
51000.0	117.7	-66.9		198.5	560.0	255.5	34.1	1.0000044
51500.0	114.8	-66.6		193.0	559.3	260.0	28.5	1.0000043
52000.0	111.9	-66.7		188.9	559.7	276.6	23.6	1.0000042
52500.0	109.2	-66.8		184.3	559.6	281.0	20.8	1.0000041
53000.0	106.5	-66.9		179.8	559.5	288.2	18.4	1.0000040
53500.0	103.8	-67.0		175.4	559.4	291.1	19.0	1.0000039
54000.0	101.3	-67.1		171.2	559.3	273.5	21.2	1.0000038
54500.0	98.7	-67.2		167.0	559.1	288.0	21.1	1.0000037
55000.0	96.3	-67.4		163.0	558.8	262.5	19.4	1.0000036
55500.0	93.9	-67.5		159.1	558.6	254.0	17.7	1.0000035
56000.0	91.6	-67.8		155.3	558.3	253.5	16.3	1.0000035
56500.0	89.3	-67.9		151.5	558.1	221.5	16.2	1.0000034
57000.0	87.1	-68.1		147.9	557.8	212.1	17.0	1.0000033
57500.0	84.9	-68.3		144.4	557.6	203.9	18.1	1.0000032
58000.0	82.8	-68.5		140.9	557.3	206.2	17.6	1.0000031
58500.0	80.7	-68.5		137.3	557.5	212.6	17.0	1.0000031
59000.0	78.7	-67.7		133.5	558.4	220.2	16.0	1.0000030
59500.0	76.3	-67.1		129.8	559.3	229.7	14.6	1.0000029
60000.0	74.8	-66.9		126.4	559.4	240.0	13.8	1.0000028
60500.0	73.0	-67.6		123.7	559.6	247.9	10.8	1.0000028
61000.0	71.2	-68.2		121.0	557.7	252.1	7.7	1.0000027
61500.0	69.4	-68.3		118.0	557.0	271.9	6.3	1.0000026
62000.0	67.7	-67.4		114.0	556.3	282.2	5.2	1.0000026
62500.0	66.0	-66.5		111.3	556.1	291.5	4.5	1.0000025
63000.0	64.4	-65.5		108.0	551.3	293.2	4.2	1.0000024

STATION ALTITUDE 3997.30 FEET MSL
17 OCT 79 0015 HRS MST
ASCENSION NO. 333

UPPER AIR DATA
2900000000
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GEODETIC COORDINATES
32.40034 LAT DEG
100.42307 LONG DEG

TABLE 16 (CONT)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TR)	SPEED KNOTS	INDEX OF REFRACTION
03500.0	02.8	-64.9		105.0	502.2	278.5	4.0	1.000023
04000.0	01.3	-64.5		102.3	502.8	280.7	3.7	1.000023
04500.0	00.6	-64.0		99.0	503.3	281.0	3.7	1.000022
05000.0	00.3	-63.6		97.0	503.9	285.0	3.8	1.000022
05500.0	00.0	-63.2		94.4	504.5	283.4	4.0	1.000021
06000.0	00.5	-62.8		91.9	505.0	283.0	5.6	1.000020
06500.0	01.2	-62.3		89.5	505.7	281.0	6.6	1.000020
07000.0	02.9	-61.7		87.1	506.5	282.4	8.6	1.000019
07500.0	01.6	-61.2		84.8	507.2	283.5	10.4	1.000019
08000.0	00.3	-60.6		82.5	507.9	287.5	11.3	1.000018
08500.0	00.1	-60.0		80.5	507.9	283.0	11.8	1.000018
09000.0	00.9	-60.8		78.7	507.7	289.2	12.3	1.000018
09500.0	00.8	-61.0		76.8	507.5	289.5	12.4	1.000017
10000.0	03.7	-60.2		74.7	508.5	280.5	12.9	1.000017
10500.0	04.6	-59.2		72.0	509.8	280.9	13.5	1.000016
11000.0	03.5	-58.3		70.0	511.1	283.9	13.5	1.000016
11500.0	02.5	-57.3		68.0	512.3	280.0	13.5	1.000015
12000.0	01.5	-56.4		66.7	513.0	276.0	10.7	1.000015
12500.0	00.5	-55.7		64.9	514.4	293.4	6.7	1.000014
13000.0	00.0	-55.9		63.4	514.2	338.0	4.5	1.000014
13500.0	00.6	-56.1		62.0	514.0	344.0	2.9	1.000014
14000.0	07.7	-56.2		60.0	513.0	280.0	1.4	1.000013
14500.0	08.8	-56.4		59.2	513.0	221.9	2.8	1.000013
15000.0	08.0	-56.0		57.0	513.3	224.2	5.9	1.000013
15500.0	05.1	-56.7		50.5	513.2	231.0	10.0	1.000013
16000.0	04.3	-56.0		50.2	513.3	233.9	14.1	1.000012
16500.0	03.5	-56.4		50.8	513.5	230.2	16.0	1.000012
17000.0	02.7	-56.3		52.5	513.0	246.5	15.3	1.000012
17500.0	01.9	-56.2		54.3	513.0	255.4	14.9	1.000011
18000.0	01.2	-56.1		51.0	514.0	283.9	14.8	1.000011
18500.0	00.4	-56.0		48.0	514.1	270.5	14.6	1.000011
19000.0	00.7	-55.0		47.0	514.0	277.5	14.0	1.000011
19500.0	00.0	-54.9		45.3	513.0			1.000010
20000.0	00.0	-54.2		43.1	513.5			1.000010
20500.0	00.0	-53.4		43.9	511.5			1.000010
21000.0	00.0	-52.7		42.0	510.4			1.000010

STATION ALTITUDE 3997.30 FEET MSL
17 OCT. 73 0815 HRS EST
ASCENDING NO. 333

MANDATORY LEVELS
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GEODETTIC COORDINATES
32.48034 LAT DEG
106.42307 LONG DEG

TABLE 17

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FLEET	AIR DEGREES CENTIGRADE	SEAPoint CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
650.0	4980.	15.1	1.0	37.	188.4	5.2
600.0	6060.	14.1	-1.0	35.	150.8	0.3
750.0	8440.	12.4	-2.0	34.	157.4	10.4
700.0	10339.	9.8	-9.0	23.	230.4	9.5
650.0	12345.	6.0	-12.7	24.	218.9	10.8
600.0	14477.	1.4	-13.0	31.	211.9	10.6
550.0	16751.	-4.9	-12.0	33.	198.2	13.8
500.0	19185.	-10.5	-25.4	29.	205.2	20.0
450.0	21813.	-10.8	-30.4	29.	217.3	23.4
400.0	24077.	-24.1	-30.0	30.	233.7	29.6
350.0	27020.	-31.7	-35.2	70.	241.8	35.5
300.0	31340.	-40.0	-42.1	80.	233.3	42.3
250.0	35334.	-50.4			232.3	57.8
200.0	40044.	-50.3			230.5	41.9
175.0	42019.	-50.0			237.2	47.8
150.0	45970.	-61.2			242.4	40.6
125.0	49053.	-63.5			243.7	34.9
100.0	54031.	-67.1			270.7	22.1
80.0	58433.	-68.1			214.6	10.8
70.0	61121.	-68.6			208.8	0.6
60.0	64190.	-64.1			254.5	3.6
50.0	67002.	-60.5			218.5	11.4
40.0	72476.	-55.8			309.5	5.3
30.0	78472.	-55.9			274.1	14.6

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.